

Species of *Hybos* Meigen from Ningxia, Palaearctic China (Diptera, Hybotidae)

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Species of *Hybos* Meigen from Ningxia, Palaearctic China (Diptera, Hybotidae). - Only one species of the genus *Hybos* was known to occur in Ningxia of Northwest China, Palaearctic Region. Here five species are reported. One species, *Hybos liupanshanus* sp. nov., is described as new to science. A key to the five species of the genus from Ningxia is presented for the first time.

Keywords: Diptera - Hybotidae - *Hybos* - new species – Ningxia.

INTRODUCTION

Within the Hybotidae *Hybos* Meigen is characterized by the following traits: long spine-like proboscis, anal cell longer than basal cell, Rs rather short, R₄₊₅ and M₁ divergent apically (Chvála, 1983; Yang & Yang, 2004). It is distributed worldwide with 164 known species, of which 12 species are from the Palaearctic Region and 130 species from the Oriental Region (Yang *et al.*, 2007). The species of *Hybos* from China were revised by Yang & Yang (2004) who mentioned 85 known species. The major references dealing with *Hybos* in the Old World are Brunetti (1920), Frey (1953), Smith (1965), Saigusa (1963, 1965), Chvála (1983), Yang & Yang (2004), and Yang *et al.* (2006).

Ningxia is a semi-humid to arid region with a temperate climate and belongs to Northwest China, Palaearctic Region. Up to now, only one *Hybos* species, *Hybos grossipes* (Linnaeus, 1767), has been described from this region (Yang & Yang, 2004). In the present paper, four species of *Hybos* are added to the fauna of Ningxia, supplementing Yang & Yang (2004). One species is described as new to science. A key to separate these five species of the genus from Ningxia is presented for the first time.

MATERIAL AND METHODS

The specimens for this study are deposited in the following collections:
CAU = Entomological Museum of China Agricultural University, Beijing, China.
MHNG = Muséum d'histoire naturelle, Genève, Switzerland.

Basic terminology follows McAlpine (1981) and Steyskal & Knutson (1981). The following abbreviations are used: acr = acrostichal, ad = anterodorsal, av = anteroventral, dc = dorsocentral, h = humeral, npl = notopleural, oc = ocellar, pd = postero-dorsal, presc = prescutellar, psa = postalar, pv = posteroventral, v = ventral.

KEY TO SPECIES (MALES) OF *HYBOS* FROM NINGXIA

- | | | |
|---|--|---|
| 1 | Legs partly or mostly yellow | 2 |
| | Legs entirely black | 4 |
| 2 | Fore and mid legs mostly black | 3 |
| | Fore and mid legs mostly yellow | <i>Hybos liupanshanus</i> sp. n. |
| 3 | Hind tibia with 2 dorsal setae at middle . | <i>Hybos hubeiensis</i> Yang <i>et</i> Yang, 1991 |
| | Hind tibia without dorsal setae at middle . | <i>Hybos joneensis</i> Yang <i>et</i> Yang, 1988 |
| 4 | Hind coxa with 3 spine-like anterior setae at tip; fore and mid tibiae and tarsomere 1 with long setulae | <i>Hybos grossipes</i> (Linnaeus, 1767) |
| | Hind coxa without spine-like anterior setae at tip; only fore tarsomere 1 with long setulae | <i>Hybos wudanganus</i> Yang <i>et</i> Yang, 1991 |

TAXONOMIC PART

Hybos liupanshanus sp. n.

Figs 1-4

MATERIAL: Holotype male, Ningxia, Longde, Liupanshan Mountain, Sutai (2100 m), 24. VI. 2008, Jingxian Liu (CAU). Paratypes 3 males 1 female, same data as holotype (CAU & MHNG).

ETYMOLOGY: The species is named after the type locality Liupanshan.

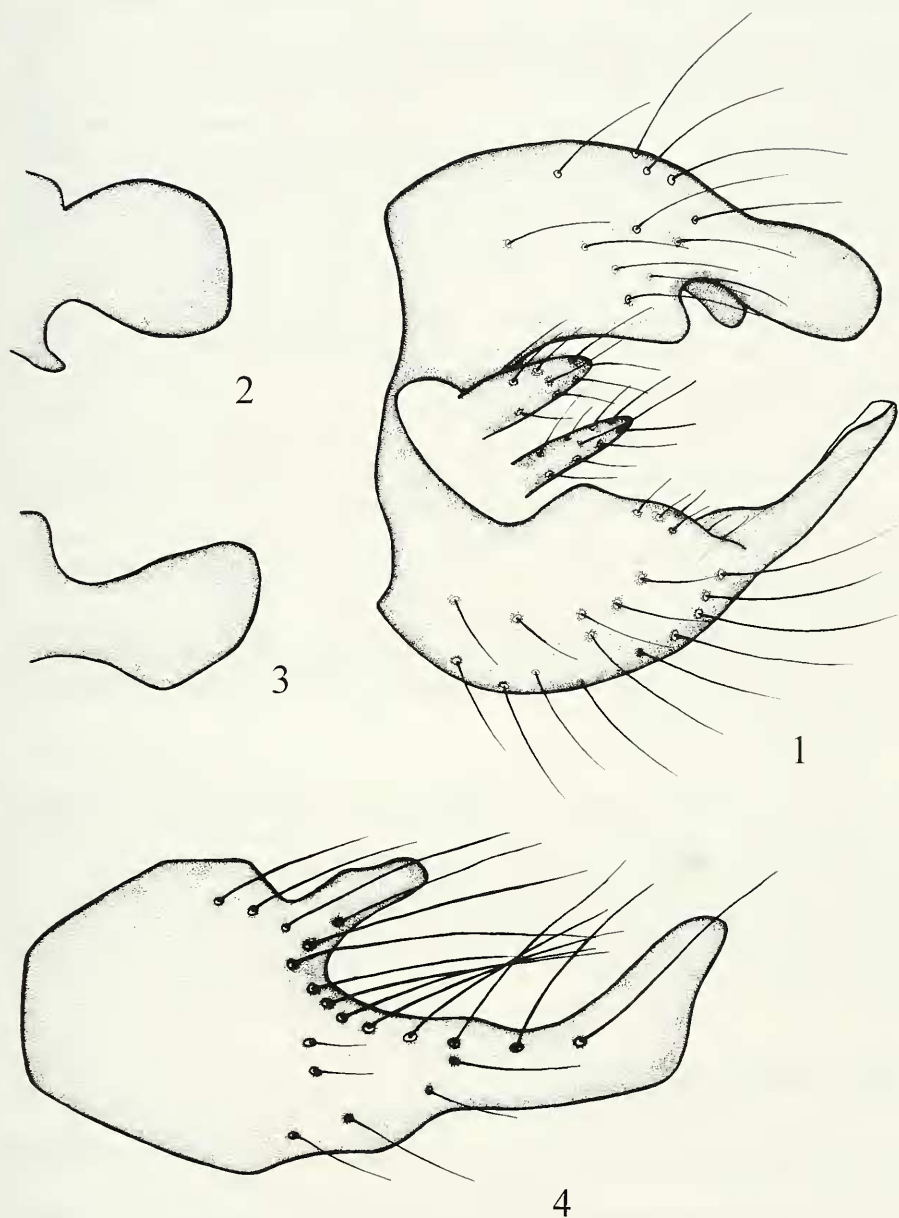
DIAGNOSIS: Setulae and setae on body pale. Legs yellow except hind coxa dark yellow, hind femur black, hind tibia partly blackish; all tarsomeres 3-5 black (not in dried specimens: tarsomeres yellow or brownish). Hypandrium with long narrow apical portion and a finger-like lateral process near base.

DESCRIPTION: MALE. Body length 4.7-4.9 mm, wing length 4.7-5.0 mm.

Head: black, pale gray microtrichose. Eyes brownish, contiguous on frons (but narrowly separated in dried specimens); upper facets indistinctly enlarged. Setae and setulae on head pale; ocellar tubercle weak, with one pair of long brownish oc. Antenna black; scape bare; pedicel with a circle of subapical setulae; first flagellomere without dorsal setulae, about 3 times as long as wide; arista black, about 3.5 times as long as first flagellomere, short pubescent except apical 1/4 thin and bare. Proboscis black; palpus black with 4 long ventral setulae.

Thorax: black, pale grey microtrichose. Setae and setulae pale; postpronotal lobe with pale setulae; h absent, 2 npl (anterior npl short), acr more or less in two rows, 1 distinct posterior dc and 8 setulae anteriad, 2 weak presc, 1 long psa; scutellum with 6 or 8 short lateral setulae and 2 long subapical setae.

Legs yellow except hind leg with coxa varying from yellow to blackish, femur black, tibia brown to blackish; tarsomeres 3-5 yellow or slightly brownish, but rarely tarsomeres 1-2 also dark brown. Setae and setulae on legs pale except tibiae and tarsi with some blackish setulae. Hind trochanter with 2 short black ventral spines apically.



FIGS 1-4

Hybos liupanshanus sp. n. (male). (1) genitalia, dorsal view. (2) right surstylus. (3) left surstylus. (4) hypandrium, ventral view.

All femora with long setulae. All tibiae and fore and mid tarsomeres 1-2 with some long and nearly erect setulae. Fore femur 1.1 times as wide as mid femur; mid femur with 1 blackish preapical anterior seta; hind femur 2.4 times as wide as mid femur, with 1 brownish yellow preapical anterior seta, and with 9 av (longer than v and pv), 15 v (3 sparse v on basal 1/2 and 12 dense v on apical 1/2), 5 pv on basal 1/3, which are spine-like and inserted on weak tubercles. Fore tibia apically with 1 blackish ad and 1 brownish yellow av; mid tibia with 1 long blackish ad at base and 1 long blackish ad at middle, apically with 1 brownish yellow av; hind tibia apically with 1 brownish yellow av. Fore tarsomere 1 with 1 black av and 1 black pv which are located at same level near extreme base; mid tarsomere 1 with two rows of black v; hind tarsomeres 1-2 with short black ventral spines. Wing slightly tinged with grayish; stigma dark brown; veins dark brown, R_{4+5} and M_1 divergent apically. Squama pale yellow, bordered with pale setulae. Halter pale yellow.

Abdomen: weakly curved downward, blackish, grey microtrichose. Setulae and setae on abdomen pale, but those on hypopygium sometimes black.

Male genitalia (Figs 1-4): left epandrial lobe with convex inner margin, left surstylus slightly constricted basally and obtuse apically; right epandrial lobe with slightly concave inner margin, right surstylus short and broad, with a short finger-like inner process at base; hypandrium much longer than wide, basally wide, apically narrow and slightly curved, and with a finger-like lateral process near base.

FEMALE: Body length 3.8 mm, wing length 4.6 mm. Similar to male, but hind trochanter without short black ventral spines apically, fore and mid tarsomere 2 without long and nearly erect setulae.

DISTRIBUTION: China (Ningxia).

REMARKS: The new species is similar to *Hybos minutus* Yang & Yang, 1997 from Hubei in the coloration of the legs, but it can be easily separated from the latter by having the first flagellomere without any dorsal seta, hind femur with 3 rows of ventral spines and hypandrium much longer than wide without the furcate apex. In *H. minutus*, the first flagellomere has 1 dorsal seta, the hind femur has one row of ventral spines, the hypandrium is slightly longer than wide, with a furcate apex (Yang & Yang, 2004).

Hybos grossipes (Linnaeus, 1767)

Musca grossipes Linnaeus, 1767: 988. Type locality: "Europa".

MATERIAL: 2 males 1 female, Ningxia, Jingyuan, Liangdianxia 2000 m, 4. VII. 2008, Jingxian Liu (CAU).

DISTRIBUTION: China (Jilin, Ningxia, Gansu, Inner Mongolia, Shanxi, Shaanxi, Hebei, Henan, Sichuan); Europe.

Hybos hubeiensis Yang et Yang, 1991

Hybos hubeiensis Yang et Yang, 1991: 3. Type locality: China: Hubei, Wudangshan Mountain.

MATERIAL: 2 males 1 female, Ningxia, Jingyuan, Longtan 1880 m, 5. VII. 2008, Jingxian Liu (CAU).

DISTRIBUTION: China (Ningxia, Henan, Gansu, Hubei).

***Hybos joneensis* Yang et Yang, 1988**

Hybos joneensis Yang et Yang, 1988: 284. Type locality: China: Gansu, Jone.

MATERIAL: 1 male 1 female, Ningxia, Jingyuan, Heshangpu 2000 m, 26. VI. 2008, Jingxian Liu (CAU).

DISTRIBUTION: China (Ningxia, Gansu).

***Hybos wudanganus* Yang et Yang, 1991**

Hybos wudanganus Yang et Yang, 1991: 5. Type locality: Hubei, Wudangshan Mountain.

MATERIAL: 1 male 1 female, Ningxia, Jingyuan, Longtan 1880 m, 5. VII. 2008, Jingxian Liu (CAU).

DISTRIBUTION: China (Ningxia, Henan, Hubei).

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